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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,459	12/20/2005	Wilhelmus Johannes Van Houtum	NL 030714	8228

65913 7590 07/05/2007
NXP, B.V.
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EXAMINER

HANNON, CHRISTIAN A

ART UNIT	PAPER NUMBER
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2618

NOTIFICATION DATE	DELIVERY MODE
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07/05/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary

Application No.

10/561,459

Applicant(s)

VAN HOUTUM, WILHELMUS
JOHANNES

Examiner

Christian A. Hannon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,7 and 10 is/are rejected.
- 7) ☒ Claim(s) 2,4-6,8 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, 7 & 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rozmaryn (US 6,128,494) in view of Kantschuk (US 6,683,913).

Regarding claim 1, Rozmaryn teaches a method of canceling a narrow band interference signal in a receiver, comprising the steps of subtracting a reference signal from a received input signal (Column 4, Lines 46-48; Rozmaryn), calculating the phase of a result of the subtraction on the basis of an arctangent function (Column 4, Lines 50-52; Rozmaryn), performing an unwrap function on the output signal from the arctangent function, by removing the modulo 2 Pi limitation introduced with the arctangent function, thereby producing an absolute phase representation (Column 4, Lines 52-54; Rozmaryn), determining a frequency offset by comparing phase representation values which are shifted predetermined in time (Column 5, Lines 15-17; Rozmaryn). However Rozmaryn fails to teach canceling the narrow band interference signal based on the result of the determined frequency offset. Kantschuk teaches canceling a narrow band

interference signal based on the result of a determined frequency offset (Column 2, Lines 55-61; Kantschuk). Therefore it would have been obvious to one of ordinary skill in the art to combine the teachings of Rozmaryn with those of Kantschuk in order to provide for a correction method in addition to mere detection of an error.

Regarding claim 3, Rozmaryn teaches the method of claim 1, characterized in that the subtracting step can be hold a predetermined period of time, if there is no reference signal available to perform the subtraction (Column 4, Lines 46-50; Rozmaryn).

Regarding claim 7, Rozmaryn teaches an apparatus characterized in that the apparatus comprises a subtracting unit for subtracting a reference signal from a received input signal (Column 4, Lines 46-48; Rozmaryn), a complex phase calculator for calculating the phase of a result of the subtraction signal on a sample-by-sample basis of the in phase and quadrature components of the signal and performing an arctangent function on the in phase and quadrature components of the incoming signal (Column 4, Lines 50-52; Rozmaryn), a phase unwrap module for removing discontinuities in the phase if the phase passes the in phase axes in the complex plane with an absolute value grater than π (Column 4, Lines 52-54), a comparator module arranged to compare the difference in phase signal values at predetermined time intervals, the difference in said values representing a frequency offset in the subtracting signal (Column 5, Lines 15-17; Rozmaryn). However Rozmaryn fails to teach canceling the narrow band interference signal based on the result of the determined frequency offset. Kantschuk teaches canceling a narrow band interference signal based on the

result of a determined frequency offset (Column 2, Lines 55-61; Kantschuk). Therefore it would have been obvious to one of ordinary skill in the art to combine the teachings of Rozmaryn with those of Kantschuk in order to provide for a correction method in addition to mere detection of an error.

Regarding claim 10, Rozmaryn and Kantschuk teach the apparatus according to claim 7, characterized in that the canceling means comprises a generating means for generating a second narrow-band signal, which corresponds to the narrow band interference signal, and a subtracting means for subtracting the second narrow band signal from the distorted desired wide band signal (Column 2, Lines 55-61; Kantschuk).

Allowable Subject Matter

4. Claims 2 & 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 2, Rozmaryn & Kantschuk teach the method of claim 1, however Rozmaryn and Kantschuk fail to teach the method characterized in that the unwrap function accumulates k times 2π , where k depends on the wrapped function so that k will be increased by 1 if the difference between the last corrected sample and the current sample is smaller than $-\pi$ and k will be decreased by 1 if the difference between the last corrected sample and the current sample is greater than n .

Regarding claim 8, Rozmaryn & Kantschuk teach the method of claim 7, however Rozmaryn and Kantschuk fail to teach the method characterized in that the phase

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unwrap module is adapted to accumulate k times 2π , where k depends on the wrapped function so that k will be increased by 1 if the difference between the last corrected sample and the current sample is smaller than $-\pi$ and k will be decreased by 1 if the difference between the last corrected sample and the current sample is greater than π .

Claims 4-6 are objected to as they depend from claim 2.

Claim 9 is objected to as it depends from claim 8.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian A. Hannon whose telephone number is (571) 272-7385. The examiner can normally be reached on Mon. - Fri. 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



C. A. Hannon
June 18, 2007



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